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Rocky Mountain  
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## ***Fuels Planning: Science Synthesis and Integration***

### **Fact Sheet: The Fuels Synthesis Project Overview**



Pacific Northwest  
Research Station



North Central  
Research Station

*Synthesizing  
Scientific Information  
for Fire and Fuels  
Project Managers*

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Fuels planning: Science synthesis and integration, an interagency research/management partnership to support the Ten-Year Fire Plan.

Fuels treatment planners often find the challenge of integrating diverse scientific findings into the design of their projects a barrier to timely decisionmaking. With an increased emphasis on treating fuels to reduce wildfire impacts in the United States, the need for well-documented, accessible scientific information is becoming ever more crucial. In April 2003, the USDA Forest Service initiated a project to accelerate the delivery of research information to fuels specialists and others involved in project planning.

The geographic focus of the “Fuels Planning: Science Synthesis and Integration” project (known as the Fuels Synthesis Project) is on the dry forests of the Western United States. Project goals include developing accessible analyses, protocols, and tools; writing peer-reviewed documents that synthesize and integrate the ecological and social science relevant to fuels treatments; and delivering these products in a user-friendly format. Target audiences include fuels management specialists, resource specialists, National Environmental Policy Act (NEPA) planning team leaders, line officers in the USDA Forest Service and the Department of the Interior; community leaders; and educators. Information derived from this effort is applicable to Categorical Exclusion documents, Environmental Impact Statements, Environmental Assessments, and NEPA documents.

The Fuels Synthesis Project is organized around four key science topics:

- Forest structure and fire hazard
- Environmental consequences of fuels treatments
- Economic uses of material and costs of fuels treatments
- Public understanding, beliefs, attitudes, and behaviors related to fuels management



**The Environmental Consequences Team** is synthesizing information about the effects of fuels treatments on wildlife and other forest resources (photo credit: E. Bull).



*Historical*



*Present*

**The Forest Structure and Fire Hazard Team** is working on new visualization techniques to help fuel planners in decisionmaking.

Teams of scientific experts from public agencies, their management counterparts, and university researchers across the country have been engaged in compiling and synthesizing scientific information available on the four key topic areas. Products of this effort include decision-support tools and peer-reviewed publications (syntheses of existing information and guidebooks). The initial series of easy-to-digest one-page fact sheets, highlighting key information and findings, has been completed. Look for current and future fact sheets in the Rocky Mountain Research Station (RMRS) Research Note (RN) series:

RMRS-RN-19: Overview of the Project  
RMRS-RN-20: Economic Uses  
RMRS-RN-21: Social Issues  
RMRS-RN-22: Forest Structure and Fire Hazards  
RMRS-RN-23: Environmental Consequences

New decision-support tools include:

- A fuel treatment guidebook that will show the effects of silvicultural and surface fuel prescriptions for a series of representative stands.
- My Fuel Treatment Planner, an economic tool to help managers compare overall cost, revenue, and economic impacts of different treatment options.



**The Economics Team** is working on tools to help evaluate treatment costs and the potential for utilization of hazardous fuels.

- The Understory (Plant) Response Model, which provides a comparative evaluation of treatments on understory plants—useful where weed invasion or plants of interest (forage, wildlife habitat, threatened and endangered species) are a consideration.
- The Wildlife Response Model, which provides qualitative estimates about the consequences of proposed treatments (positive, negative, null effects) to most vertebrate animals in the Interior West.

- The *Armillaria* Response Tool, which helps to identify areas where *Armillaria* root rot is a potential problem after entry into a stand.

In addition, existing software programs have been enhanced, making them easier to run and to provide output in more useful formats for planning documents. These include:

- The Smoke Information System, which estimates smoke production, emissions, and dispersion.
- WEPP-FuME, an enhanced variation of Disturbed-WEPP, which estimates the probability of sediment yield and flooding after disturbance (for example, burning and logging).



**The Social Science Team** is synthesizing information on the social considerations important in fire and fuels management (photo credit: V. Sturtevant).

Social science information will be provided using a pyramid approach. The first source of information will be basic one-page “how-to” fact sheets. For additional detail on all topic areas, fire and fuels managers will be able to turn to a General Technical Report (GTR) that will provide a complete synthesis of information on each topic. We expect the initial GTRs to be available mid to late 2005. A searchable bibliography will also be provided. Syntheses will be provided in six key social areas relevant to fuels management: collaboration, risk communication, personal responsibility, social acceptability, aesthetics, and social impacts of wildfire.

All of the information from the Fuels Synthesis Project are backed by up-to-date scientific findings and have undergone peer review. For more information, please visit our Web site:

**[www.fs.fed.us/fire/tech\\_transfer/synthesis/synthesis\\_index](http://www.fs.fed.us/fire/tech_transfer/synthesis/synthesis_index)**

*The Fuels Planning fact sheets are based on preliminary findings. Information from fact sheets will be synthesized in an upcoming publication.*